

TULOSTOMA STRIATUM (GASTEROMYCETES, BASIDIOMYCOTINA) NEW FOR EUROPE

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ABSTRACT - *Tulostoma striatum* G.H. Cunningham is described for the first time for the Iberian Peninsula and Europe. Microphotographs of the more important characters and data about its worldwide distribution are added.

RÉSUMÉ - Nous décrivons *Tulostoma striatum* G.H. Cunningham, comme nouvelle espèce pour la mycoflore de l'Espagne et de l'Europe. Les microphotographies des caractéristiques les plus importantes et une étude chorologique sont présentées.

KEY WORDS : Taxonomy, chorology, *Tulostoma striatum*, Gasteromycetes.

INTRODUCTION

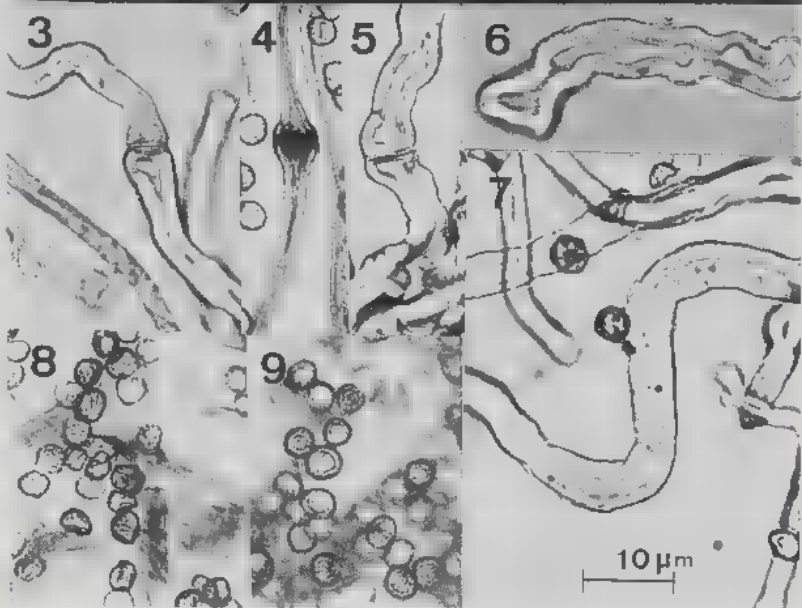
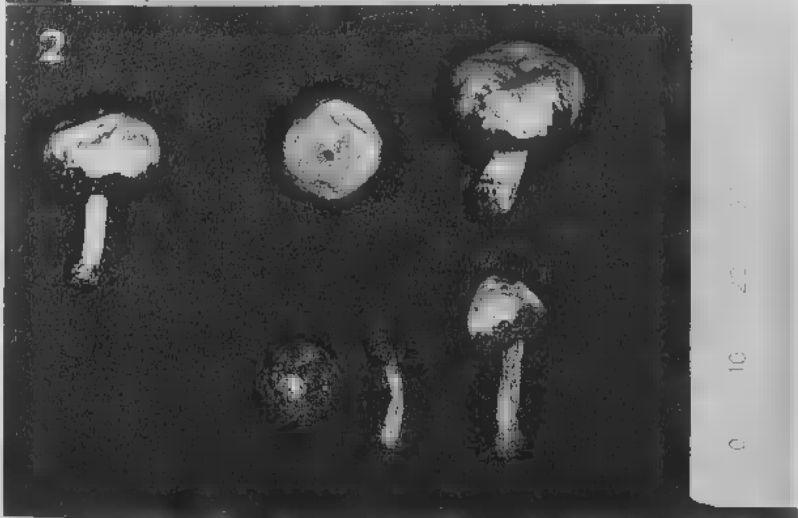
As we noted in Moreno et al. (1990), the genus *Tulostoma* Pers.:Pers. grows mainly in desertic, semidesertic or xeric soils. The Iberian Peninsula is a very interesting area for the study of this genus, because of its geographic placement, a bridge between two continents.

At the present time, 17 species have been catalogued for our country (Calonge & Wright, 1989), to which must be added *T. cyclophorum* C. Lloyd (Moreno et al., *loc. cit.*) and *T. striatum* G.H. Cunningham, here described.

MATERIAL AND METHOD

The material studied have been deposited at the Herbarium of the Department of Plant Biology (Botany), Univeristy of Alcalá de Henares (IAH).

Some of the microphotographs have been made under a Zeiss DSM-950 S.E.M. The samples were treated in a Polaron E-5000 sputter coater during 120 seconds at 1.4 kV and 18 mA in an atmosphere of Argon to obtain a golden coat of 500 Å. The spores have been mounted dusting them over aluminium stubs and diluting them in a drop of a mixture of ethylic alcohol and ammonium hydroxid 1:1, posteriorly dried in the air.



We have also used a Labophot microscope with incorporated automatic photograph system. In this case, the samples were observed in ammonium hydroxyd 5% and in lactophenol blue.

DESCRIPTION

Tulostoma striatum G.H. Cunningham, *Proc. Linn. Soc. N.S.W.* 50: 255 (1925), Figs 1-20.

Material examined: SPAIN: Madrid, Carabanchel Alto, in urban area, on the border of a sandy path (acid soil) near a nitrificate prairie, gregarious, mixed with *T. fimbriatum* Fr., 8-XI-89, leg. A. Martínez, H.AH 11991.

Spore-sac globose to subglobose-depressed, 0.9-1.6cm in diameter. Exoperidium clearly membranous persisting at the base and in herbarium, dark coloured on the outside because of the remains of soil, and pale cream on the inner side. Endoperidium whitish cream to pinkish ochraceous, typically pubescent or velvety under lens; surface of the endoperidium constituted by hyphae of 6-7 μ m in diameter, similar to those of the capillitium, somewhat branched, with thick walls and generally with very wide septae (9-14 μ m). Stoma fibrillose to fimbriate. Stem whitish to cream, cylindrical, with a slightly bulbous base, 0.7-1.4 x 0.2-0.4cm, striated when dried and in herbarium. Spores globose to subglobose, 5-7 μ m in diameter, yellowish, with characteristic bands which are visible under optical microscope. Under S.E.M., the spores are identical to those of Wright (1987), with very distinct ribs, sometimes arranged as meridians or more irregularly, even anastomosing; small warts can be also observed between the ribs which are imperceptible under optical microscope, as were described by Wright. Capillitium subhyaline, filamentous, branched, septate, sinuous, 6-12 μ m diameter, with thick walls and large lumen, sometimes lacunar.

This species is distinguished by its membranous exoperidium, pubescent endoperidium under lens, fibrillose-fimbriate stoma and spores with a typically striated ornamentation. According to Wright (1987: 197) its presence is known in America (Argentina, Brazil, Ecuador, Mexico, Paraguay, Puerto Rico, Uruguay, U.S.A.), Africa (South Africa), Asia (Israel -Wright, *loc. cit.*: 53, Japan), Australasia (Australia, New Zealand). This seems to be the first record in Europe.

Its macroscopic characters resemble *T. cyclophorum* Lloyd but this shows mycosclereids on the endoperidium under optical microscope; furthermore, the spores are smaller and have a characteristic reticulate ornamentation.

Fig. 1-9. - *Tulostoma striatum* G.H. Cunningham. 1-2: fruit bodies, 3-7: capillitium, 8-9: spores.

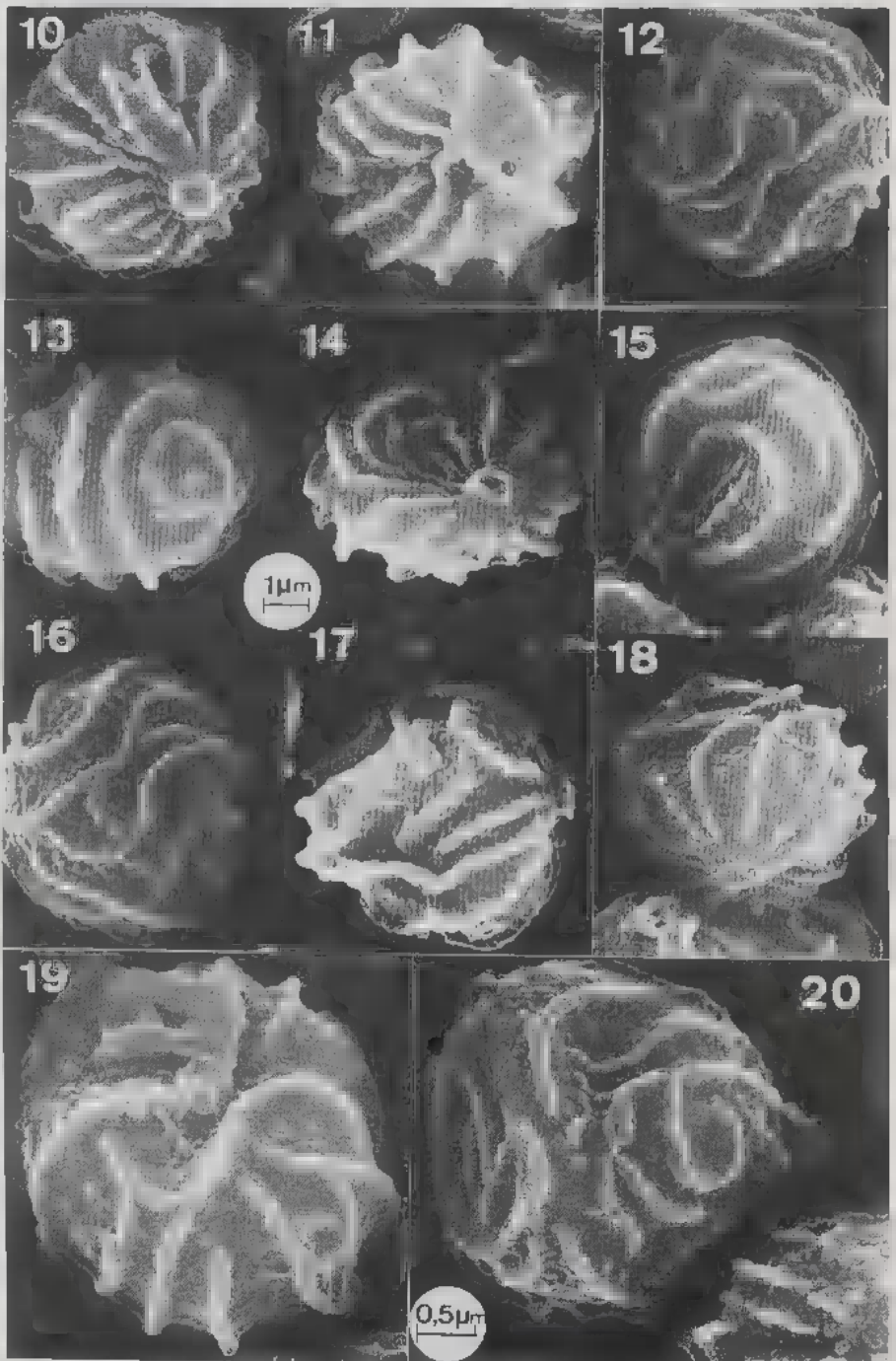


Fig. 10-20. - *Tulostoma striatum* G.H. Cunningham. Spores.

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LITERATURE

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